Luminant

Rafael Flores
Senior Vice President
& Chief Nuclear Officer
rafael.flores@Luminant.com

Luminant Power
P O Box 1002
6322 North FM 56
Glen Rose, TX 76043

T 254 897 5550
C 817 559 0403
F 254 897 6652

CP- 201001010
TXX - 10104

August 31, 2010

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT
DOCKET NO. 50-445
COMPONENT COOLING WATER TRAIN INOPERABLE DUE TO INADEQUATE POST WORK TEST PROCEDURE
LICENSEE EVENT REPORT 445/10-004

Dear Sir or Madam:

Pursuant to 10CFR50.73(a)(2)(i)(B), Luminant Generation Company, LLC (Luminant Power) is submitting Licensee Event Report (LER) 445/10-004-00, "Component Cooling Water Train Inoperable Due to Inadequate Post Work Test Procedure," for Comanche Peak Nuclear Power Plant (CPNPP) Unit 1 (see enclosure).

This communication contains the following new commitment which will be incorporated into the CPNPP licensing basis as noted.

Number	Commitment
4013172	The CCW to RHR/CS Heat Exchanger outlet valve flow control test procedure will be revised to ensure that the valves will correctly function during a P-signal or subsequent surveillance testing.

The commitment number is used by Luminant Power for the internal tracking of CPNPP commitments.

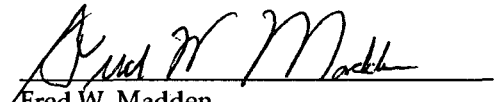
IE22
NRR

Should you have any questions, please contact Gary Merka at (254) 897-6613.

Sincerely,

Luminant Generation Company LLC

Rafael Flores

By: 
Fred W. Madden
Director, Oversight & Regulatory Affairs

Enclosure

c - E. E. Collins, Region IV
B. K. Singal, NRR
Resident Inspectors, Comanche Peak

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES: 8/31/2010

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Comanche Peak Nuclear Power Plant Unit 1	05000- 445	1 of 5

4. TITLE

Component Cooling Water Train Inoperable Due to Inadequate Post Work Test Procedure

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCUMENT NUMBER
										05000
07	04	2010	2010	004	00	08	31	2010	FACILITY NAME	DOCUMENT NUMBER 05000

9. OPERATING MODE: 1

10. POWER LEVEL: 100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (*Check all that apply*)

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	VOLUNTARY LER

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (*Include Area Code*)
Timothy A. Hope, Nuclear Licensing Manager	(254)897-6370

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED: ☐ YES (*If yes, complete 15. EXPECTED SUBMISSION DATE*) ☐ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT (*Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines*)

On July 4, 2010 during performance of the Unit 1 Train B Safeguards Slave Relay K644 Actuation surveillance test, unsatisfactory results were obtained. Operations personnel discovered that the Train B Containment Spray Heat Exchanger 1-02 Component Cooling Water Return valve was oscillating from 100 percent open to approximately 22 percent open. Troubleshooting subsequently revealed that an actuator rotor on this motor operated valve had been incorrectly set during the previous Unit 1 outage.

The cause of this event was the post work test procedure did not provide specific instructions to ensure that an actuator rotor "dead band" was maintained after all of the rotor adjustments had been completed. Immediate corrective actions included resetting the actuator rotor to the correct position and successfully performing the Slave Relay Actuation test. Long term corrective actions include procedure changes.

All times in this report are approximate and Central Time unless noted otherwise.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
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Comanche Peak Nuclear Power Plant Unit 1	05000 – 445	2010	004	00	2 OF 5

NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

I. DESCRIPTION OF THE REPORTABLE EVENT

A. REPORTABLE EVENT CLASSIFICATION

10CFR50.73(a)(2)(i)(B) "Any operation or condition which was prohibited by the plant's Technical Specifications."

B. PLANT CONDITION PRIOR TO EVENT

On July 4, 2010, Comanche Peak Nuclear Power Plant (CPNPP) Unit 1 was in Mode 1 operating at 100% power.

C. STATUS OF STRUCTURES, SYSTEMS, OR COMPONENTS THAT WERE INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT

There were no structures, systems, or components that were inoperable at the start of the event that contributed to the event.

D. NARRATIVE SUMMARY OF THE EVENT, INCLUDING DATES AND APPROXIMATE TIMES

On April 3, 2010, the 14th refueling outage began on Unit 1. During the outage, the actuator was refurbished on the Train B Containment Spray (CS) Heat Exchanger 1-02 Component Cooling Water (CCW) Return valve [EIIS: (CC)(V)], which is a motor operated valve (MOV).

On April 21, 2010, during performance of the CCW to Residual Heat Removal (RHR)/CS Heat Exchanger outlet valve flow control test on this valve, adjustments were made to the actuator rotors. During these adjustments, one of the rotors was set incorrectly. Since the CCW to RHR/CS Heat Exchanger outlet valve flow control test (which was the post work test procedure) did not have any specific steps to verify the position of the rotors, the incorrect rotor adjustment was not detected. On April 22, 2010, following completion of the CCW to RHR/CS Heat Exchanger outlet valve flow control test, the Unit 1 CCW system was declared operable. On April 25, 2010, at 1138 hours, Unit 1 entered Mode 4. Per Technical Specification 3.7.7, two CCW trains are required to be operable in Modes 1 thru 4.

On July 4, 2010, Unit 1 was in Mode 1 operating at 100% power. At 1030 hours, the Unit 1 Train B Safeguards Slave Relay K644 Actuation surveillance test procedure was performed. This procedure satisfies part of the Slave Relay Test requirements of Technical Specification (TS) Surveillance Requirement (SR) 3.3.2.6.2b, part of the Containment Spray Actuation test requirements of TS SR 3.6.6.6, and part of the Engineered Safety Features Actuation test requirements of the CCW System of TS SR 3.7.7.2 by verifying the operability of Train B Slave Relay K644 in the Solid State Protection System.

During the test, unsatisfactory results were obtained due to the Train B CS Heat Exchanger 1-02 CCW Return valve not opening to the required position and a monitor light box not illuminating as expected. Operations personnel (Utility, Licensed) discovered that the CS Heat Exchanger 1-02 CCW Return valve was oscillating from 100 percent open to approximately 22 percent open. At 1050 hours, Train B of the Unit 1 CCW System was declared inoperable. Troubleshooting subsequently revealed that one of the actuator rotors had been incorrectly set during the last Unit 1 outage. The misadjusted rotor caused the valve to oscillate from the throttled position to full open upon receipt of a simulated P-signal.

On July 5, 2010, the rotor was readjusted to the correct position, the Unit 1 Train B Safeguards Slave Relay K644 Actuation surveillance test procedure was successfully re-performed, and at 2239 hours Train B of the Unit 1 CCW System was declared operable.

E. THE METHOD OF DISCOVERY OF EACH COMPONENT OR SYSTEM FAILURE, OR PROCEDURAL PERSONNEL ERROR

Operations personnel (Utility, Licensed) discovered that the Train B CS Heat Exchanger 1-02 CCW Return valve was cycling from the mid position to 100 percent open during performance of the Unit 1 Train B Safeguards Slave Relay K644 Actuation surveillance test. Troubleshooting subsequently revealed that an actuator rotor on the motor operated valve had been incorrectly set during the last Unit 1 outage.

II. COMPONENT OR SYSTEM FAILURES

A. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE

Not applicable - No component failures were identified during this event.

B. FAILURE MODE, MECHANISM, AND EFFECTS OF EACH FAILED COMPONENT

Not applicable - No component failures were identified during this event.

C. SYSTEMS OR SECONDARY FUNCTIONS THAT WERE AFFECTED BY FAILURE OF COMPONENTS WITH MULTIPLE FUNCTIONS

Not applicable - No component failures were identified during this event.

D. FAILED COMPONENT INFORMATION

Not applicable - No component failures were identified during this event.

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* (17)

III. ANALYSIS OF THE EVENT

A. SAFETY SYSTEM RESPONSES THAT OCCURRED

Not applicable - No safety system responses occurred as a result of this event.

B. DURATION OF SAFETY SYSTEM TRAIN INOPERABILITY

During this event, Train B of the Unit 1 CCW system was inoperable because it could not meet all of the applicable surveillance requirements during the time that the rotor was misadjusted on the MOV. Train B of the Unit 1 CCW System was inoperable from 1138 hours on April 25, 2010, to 2239 hours on July 5, 2010, a period of 1,811 hours. However, as discussed below, Train B of the Unit 1 CCW remained capable of performing its specified safety function from April 25, 2010, to July 5, 2010.

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

The specified safety function of the CS Heat Exchanger 1-02 CCW Return Valve is to automatically stroke from closed to fully open and then to a partially open position to provide a CCW flow path through the CS heat exchanger on a P-Signal. Flow balancing through the Residual Heat Removal (RHR) and CS heat exchangers is set via manually operated butterfly valves and fine tuned by automatic positioning of the motor operated heat exchanger outlet control valves. The throttled position of the CS Heat Exchanger 1-02 CCW Return Valve regulates CCW flow through the CS heat exchanger to avoid overheating the CCW system during a P-signal. The throttled position is determined by the CCW to RHR/CS Heat Exchanger outlet valve flow control test procedure.

Flow balancing of the CCW safeguards loops in the P-Signal mode of operation is required to ensure post-LOCA operability. A minimum flow to the RHR and CS heat exchangers is required to ensure environmental qualification envelopes are not exceeded. A maximum flow is required to ensure the CCW temperature does not exceed 135 degrees F post-LOCA. The CS and RHR heat exchanger outlet valves may be fully opened during long term post accident conditions (MODES 4, 5, or 6 and when full flow through the heat exchangers is required and/or acceptable). The inlet valves of the CS and RHR heat exchangers are manually operated, normally closed butterfly valves. These inlet valves have holes in the discs which act as restrictive orifices thus, regulating CCW flow through the CS and RHR heat exchangers during accident conditions.

During this event, the CS Heat Exchanger 1-02 CCW Return Valve was oscillating from 100 percent open to approximately 22 percent open roughly four times per minute. With the valve 22 percent open, CCW flow through the CS heat exchanger is approximately 3,450 gpm while the flow with the valve 100 percent open is approximately 7,400 gpm. 7,400 gpm is a conservative number based on the CS heat exchanger inlet and outlet valves being fully open. Actual CCW flow through the CS heat exchanger during a P-signal would be smaller due to the restrictive orifices in the inlet valve. The worst case scenario would be for the motor operator of the CS Heat Exchanger 1-02 CCW Return

Valve to fail with the valve in the full open position as this would cause a higher than anticipated heat transfer to the CCW system during a P-signal.

Given the worst case SSI temperature of 102 degrees F and a CCW heat exchanger fouling factor of 0.00085, analysis shows that the Unit 1 Train B CCW system would have reached a maximum temperature of 131.8 degrees F. However, with the actual SSI high temperature of 95.5 degrees F, calculations show that the Unit 1 Train B CCW system would have reached a maximum temperature of 127.0 degrees F. Therefore, the Unit 1 CCW Train B remained capable of performing its safety function from April 25, 2010, to July 5, 2010, since the analyzed conditions would not have caused CCW temperatures to rise above the design basis temperature of 135 degrees F during a LOCA.

From April 25 to July 5, 2010, no events occurred requiring the Unit 1 CCW system to provide a flow path through the CS or RHR Heat Exchangers. Since at least one Train of the Unit 1 CCW System was available to perform the safety function from April 25 to July 5, 2010, this event is not reportable as a safety system functional failure per 10CFR50.73(a)(2)(v)(D) and the potential safety significance is very low. Based on the above, this event had minimal safety consequences and the health and safety of the public was not affected.

IV. CAUSE OF THE EVENT

The cause of this event was the post work test procedure did not provide specific instructions to ensure that an actuator rotor "dead band" was maintained after all of the rotor adjustments had been completed.

V. CORRECTIVE ACTIONS

Immediate corrective actions included resetting the actuator rotor to the correct position and successfully re-performing the Unit 1 Train B Safeguards Slave Relay K644 Actuation surveillance test. The CCW to RHR/CS Heat Exchanger outlet valve flow control test procedure will be revised to ensure that the valves will correctly function during a P-signal or subsequent surveillance testing. Other similar MOV test procedures will be reviewed and revised as required to ensure that any qualified MOV test personnel can successfully execute the procedure.

VI. PREVIOUS SIMILAR EVENTS

There have been no previous similar reportable events at CPNPP in the last three years.